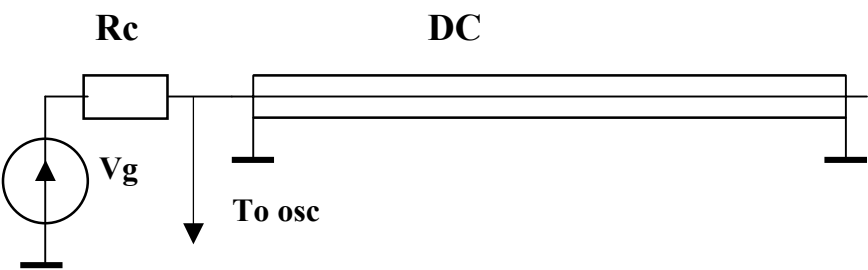
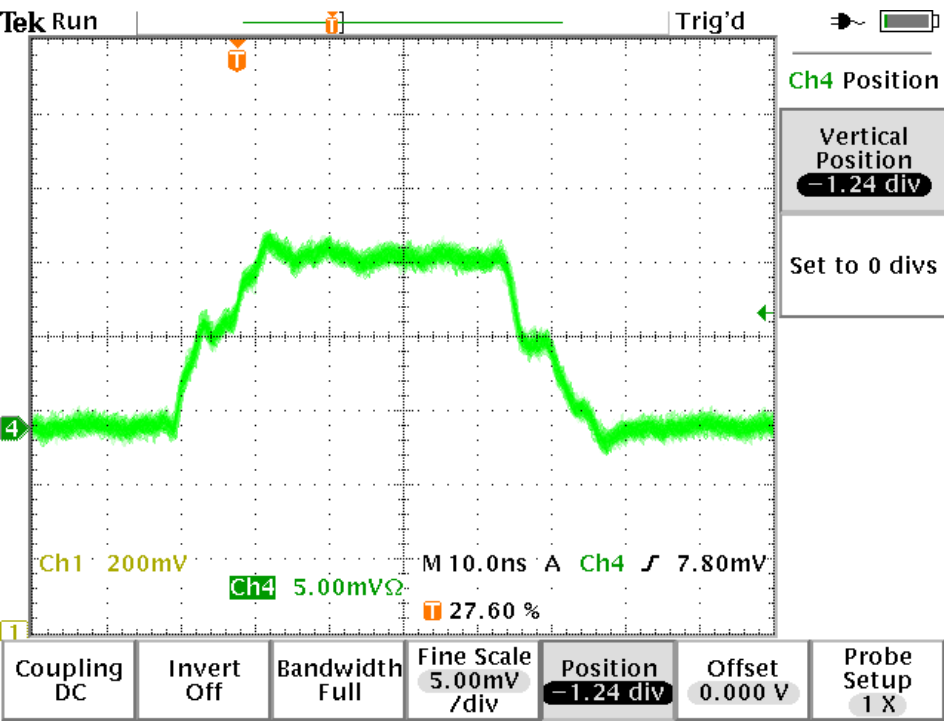


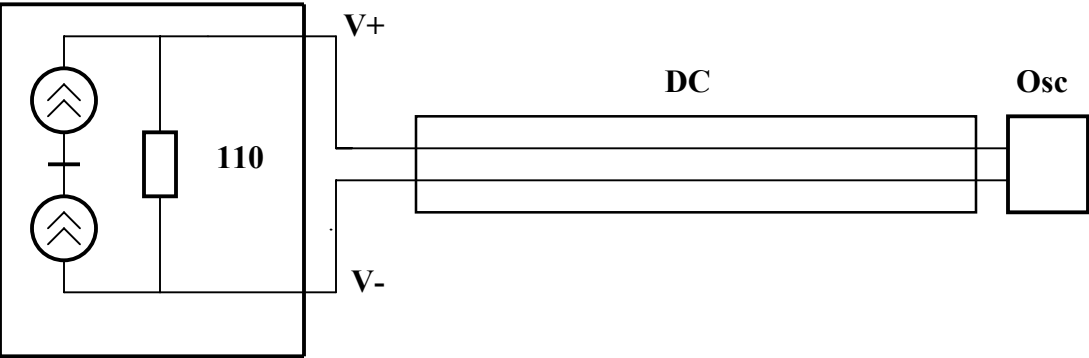
The measurment of the digital cable characteristic resistance (TTL driver 12MHz)



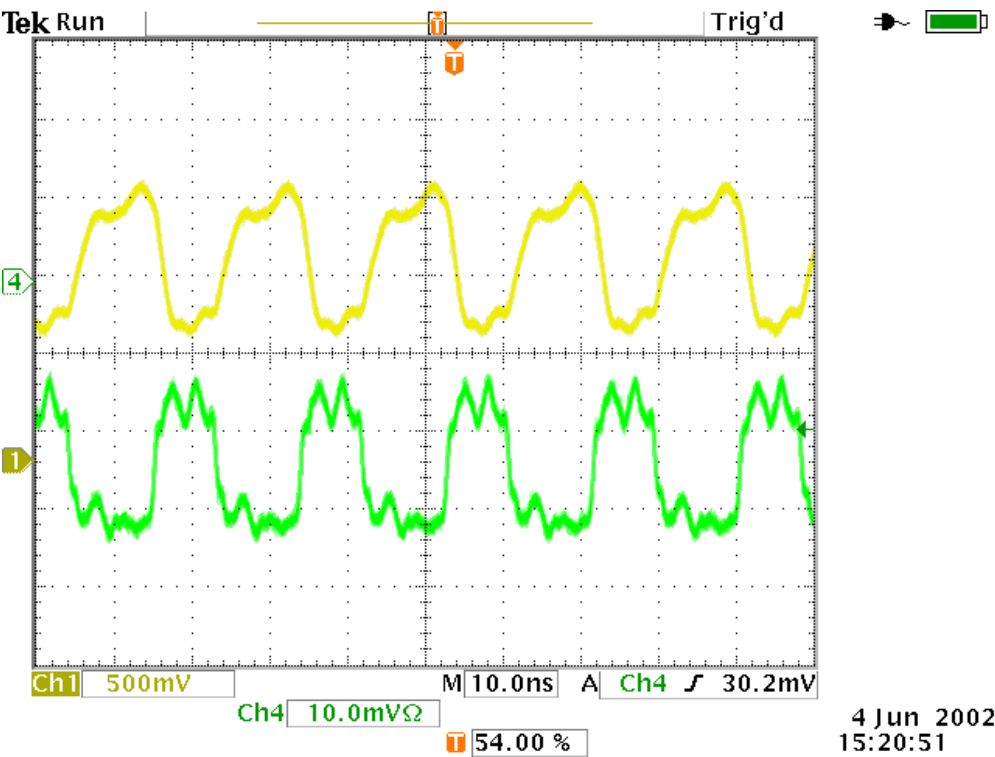
$R_c=60\text{ Ohm}$



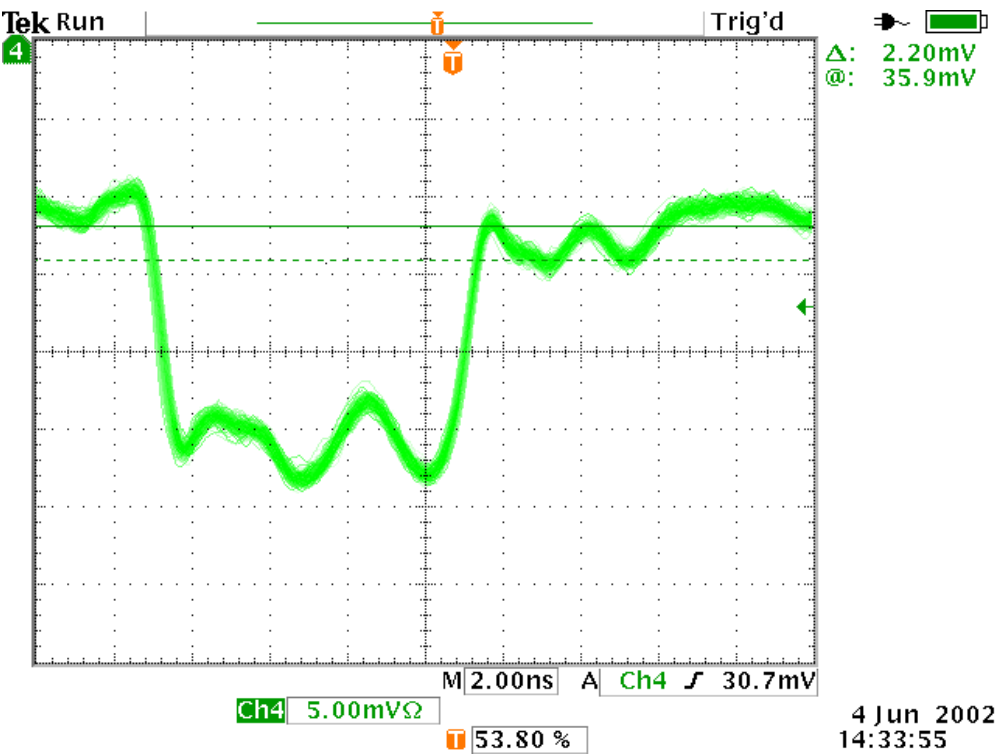
LVDS driver research



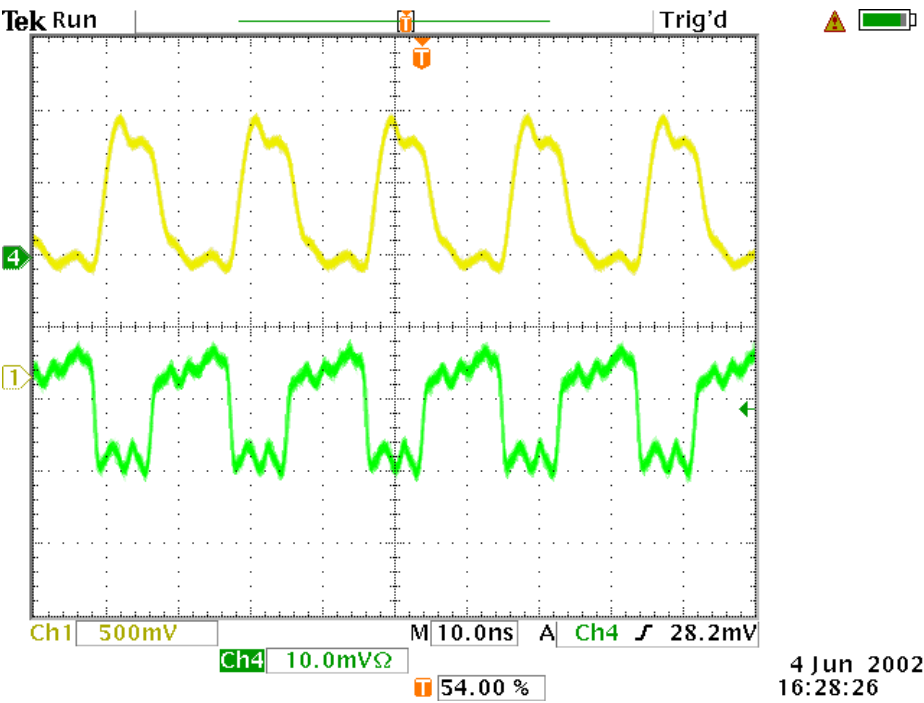
Double digital cable (D7 -/D7) (LVDS driver 53 MHz)



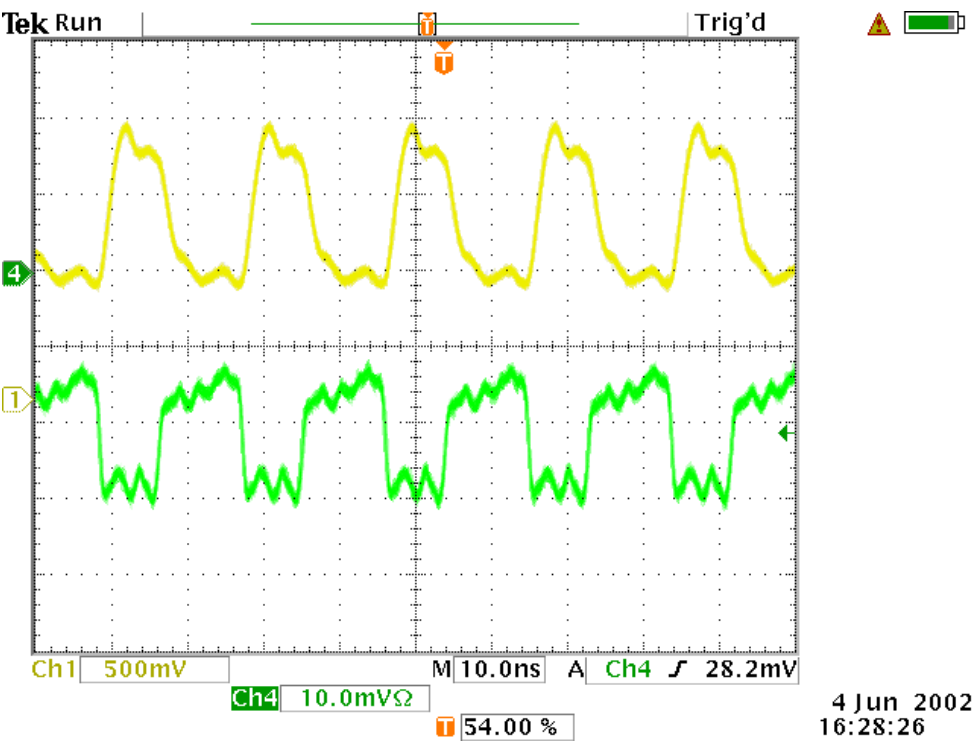
The same, but the scale is extended



Double digital cable (CLK - /CLK) (LVDS driver 53 MHz)

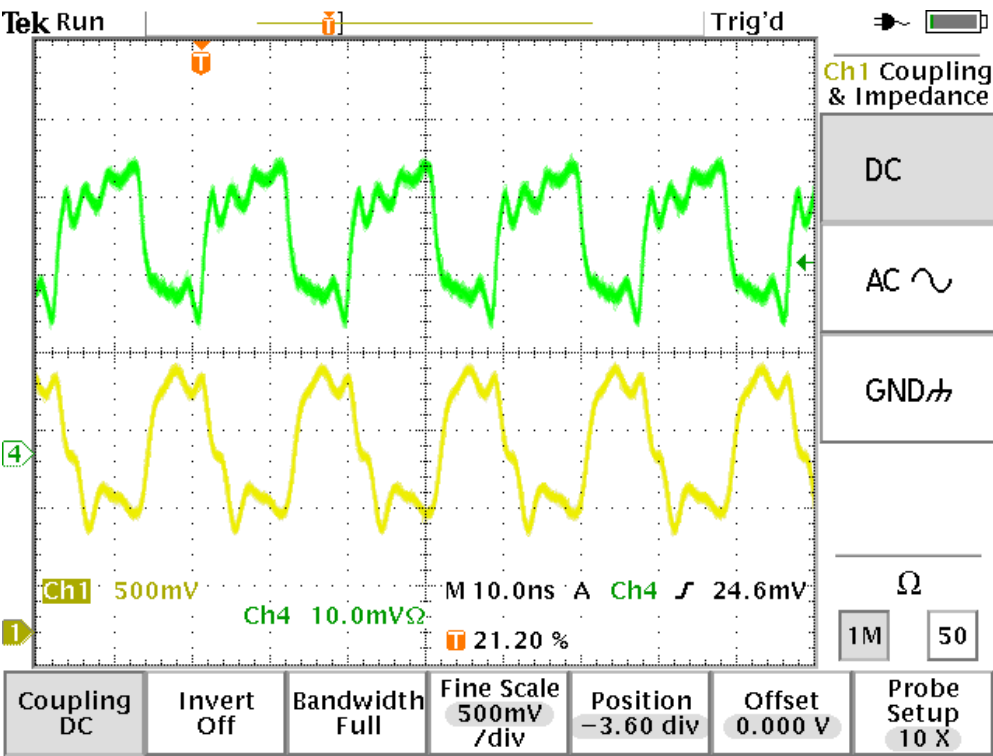
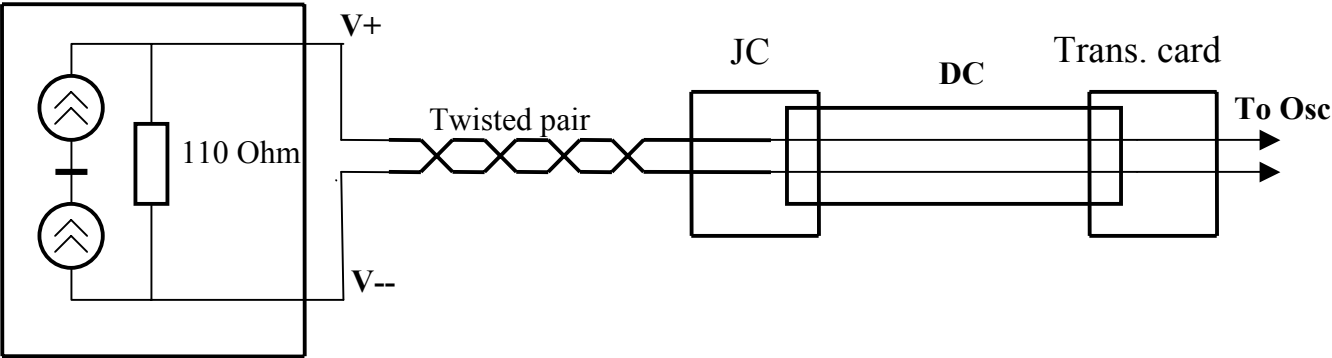


Double digital cable (D3 -/D3) (LVDS driver 53 MHz)



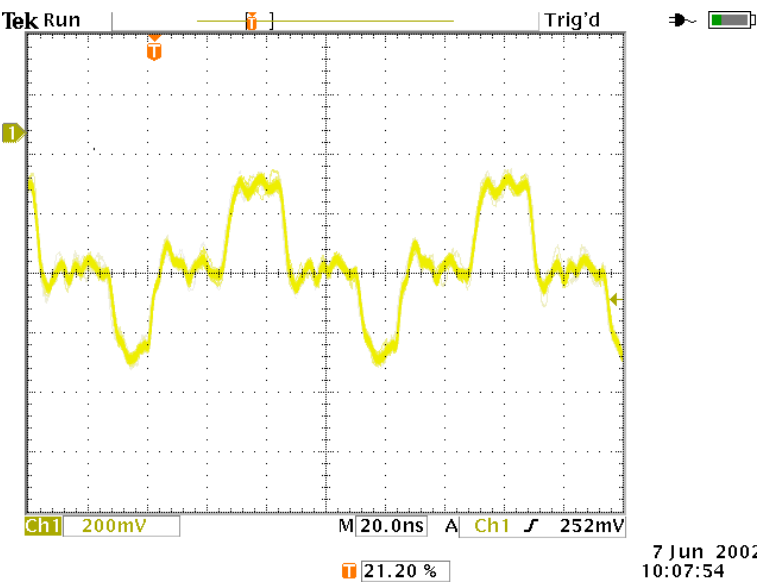
Twisted pair + digital cable D5 - /D5 (LVDS driver 53 MHz)

LVDS driver

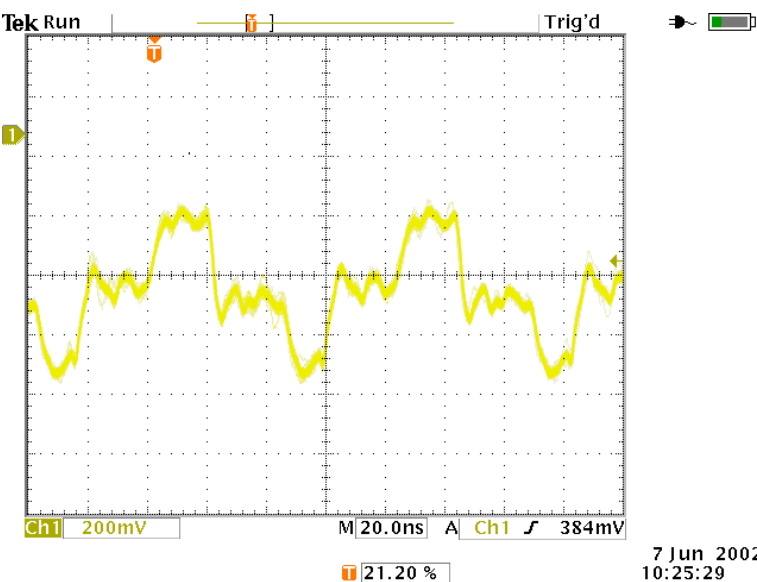


The measurment of the coaxial cable characteristic resistance see the first page)  
(TTL driver 12MHz)

1.  $R_c=72\text{ Ohm}$

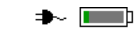
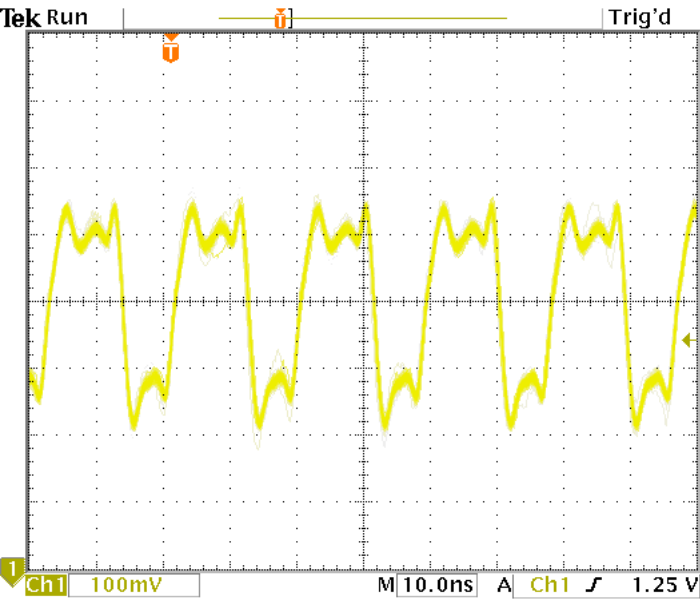
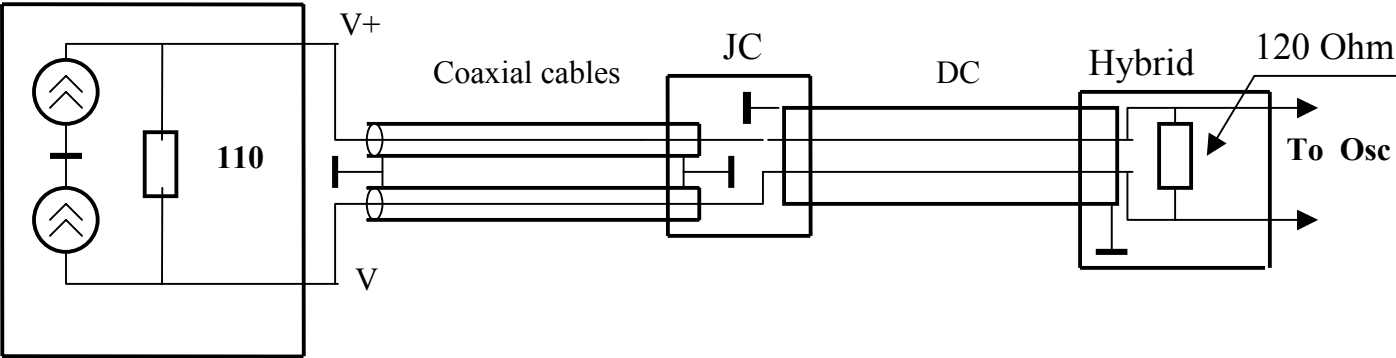


2.  $R_c=60\text{ Ohm}$

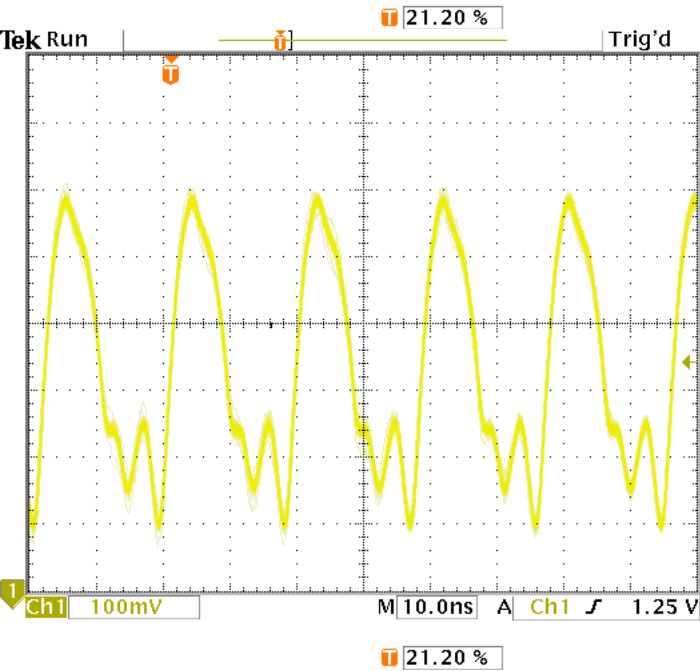


Coaxial + digital cables (CLK - /CLK) (on the Hybrid side)(LVDS driver 53 MHz)

LVDS driver



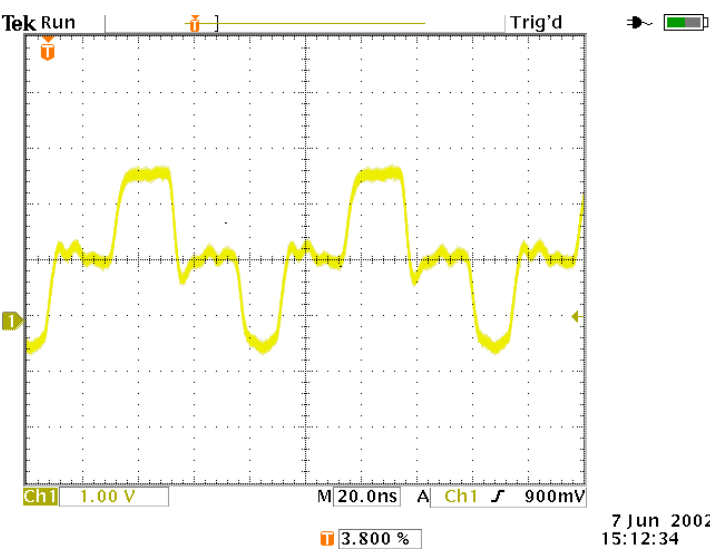
7 Jun 2002  
08:50:42



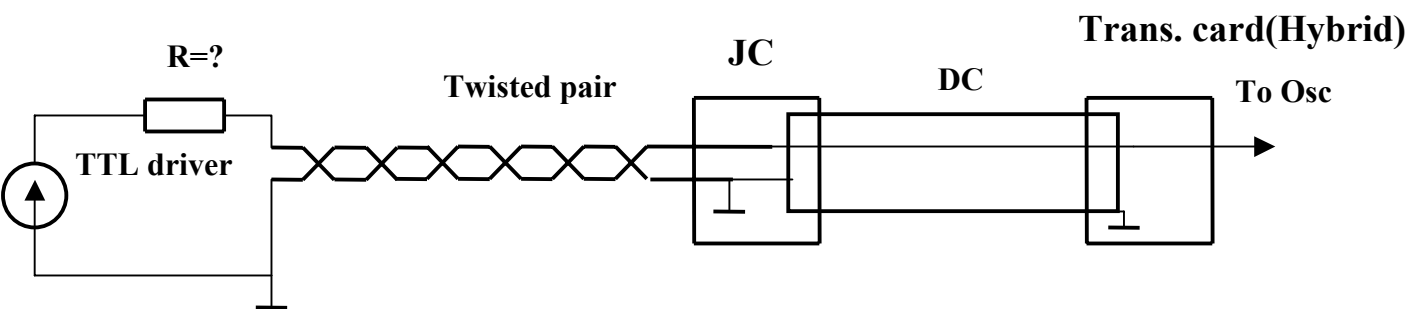
7 Jun 2002  
08:53:43

The measurment of the twisted pair characteristic resistance  
(see the first page) (TTL driver)

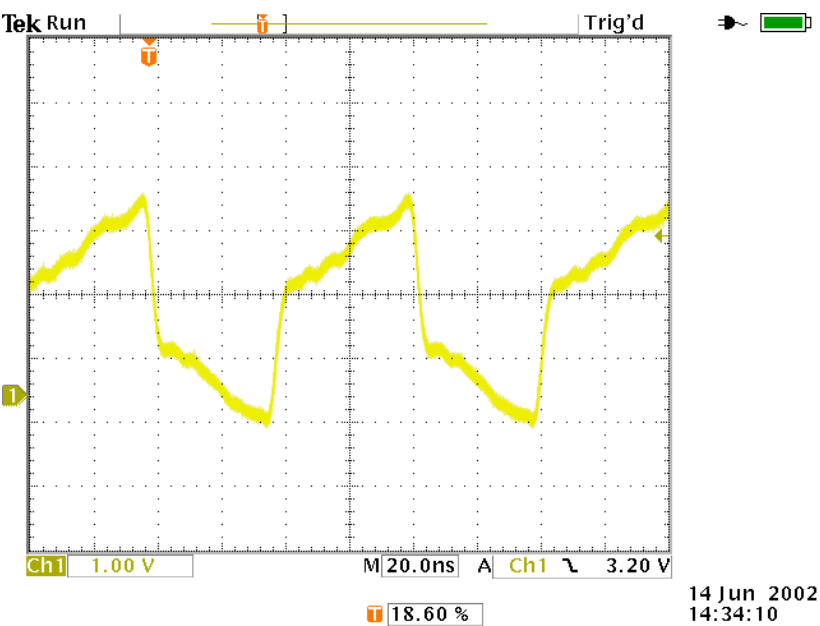
$R_c=120\text{ Ohm}$



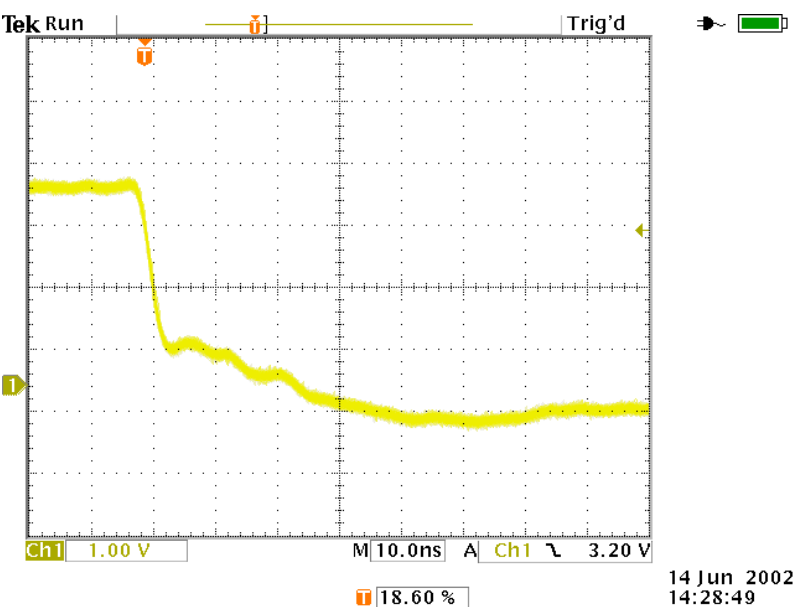
One twisted pair + digital cable for Mode0, Mode1, CH\_Mode, PR\_IN R= ?



One twisted pair + digital cable R= 90 Ohm (12 MHz)

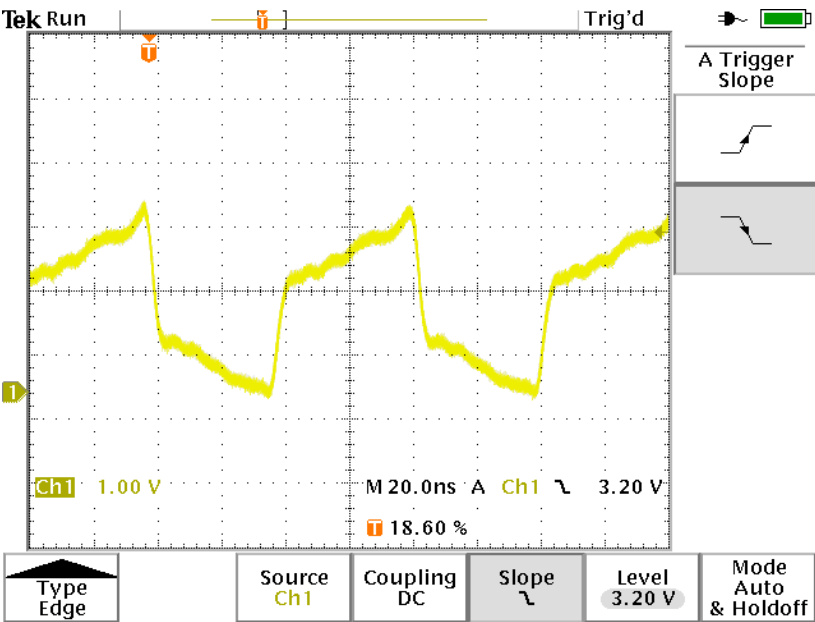


One twisted pair + digital cables R= 90 Ohm (1 MHz)

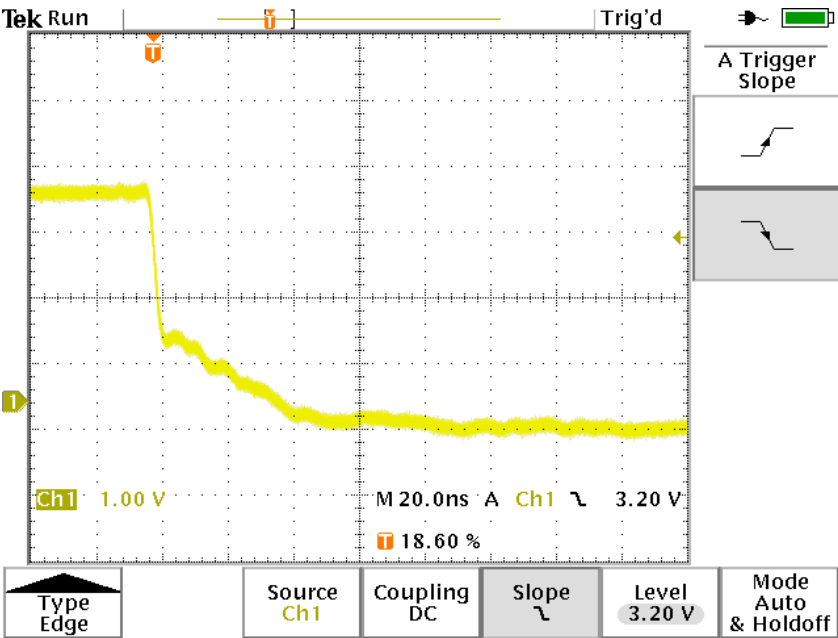




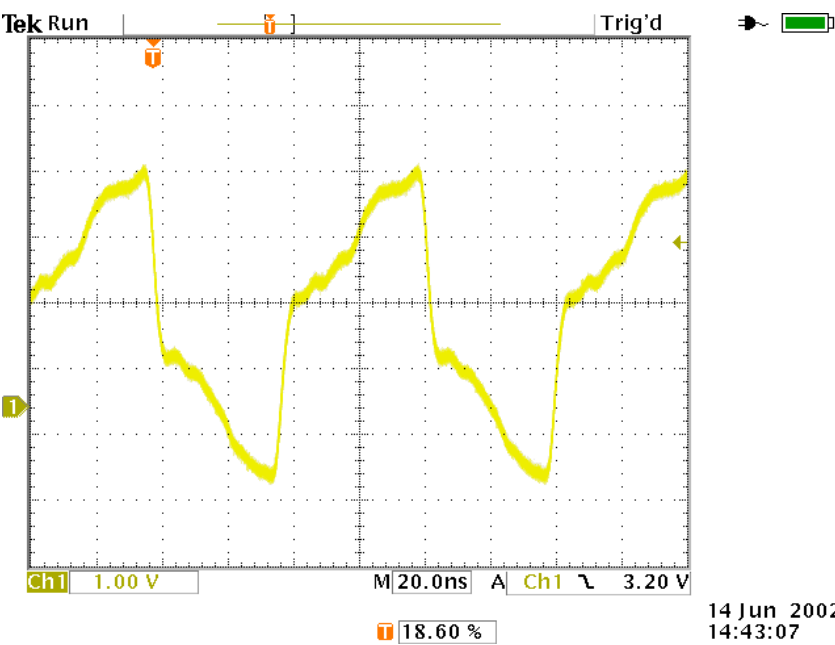
One twisted pair + digital cable R= 120 Ohm (12 MHz)



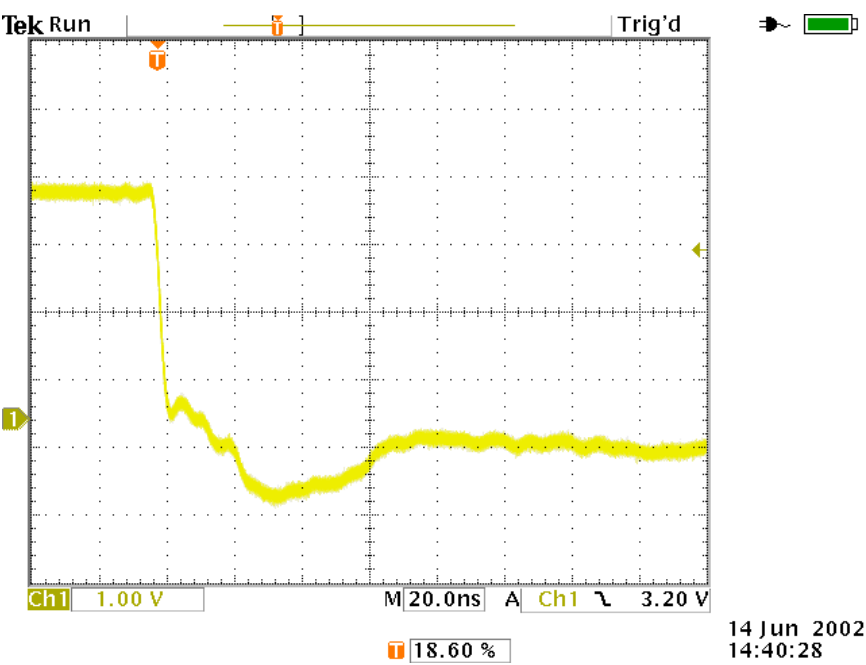
One twisted pair + digital cables R= 120 Ohm (1 MHz)



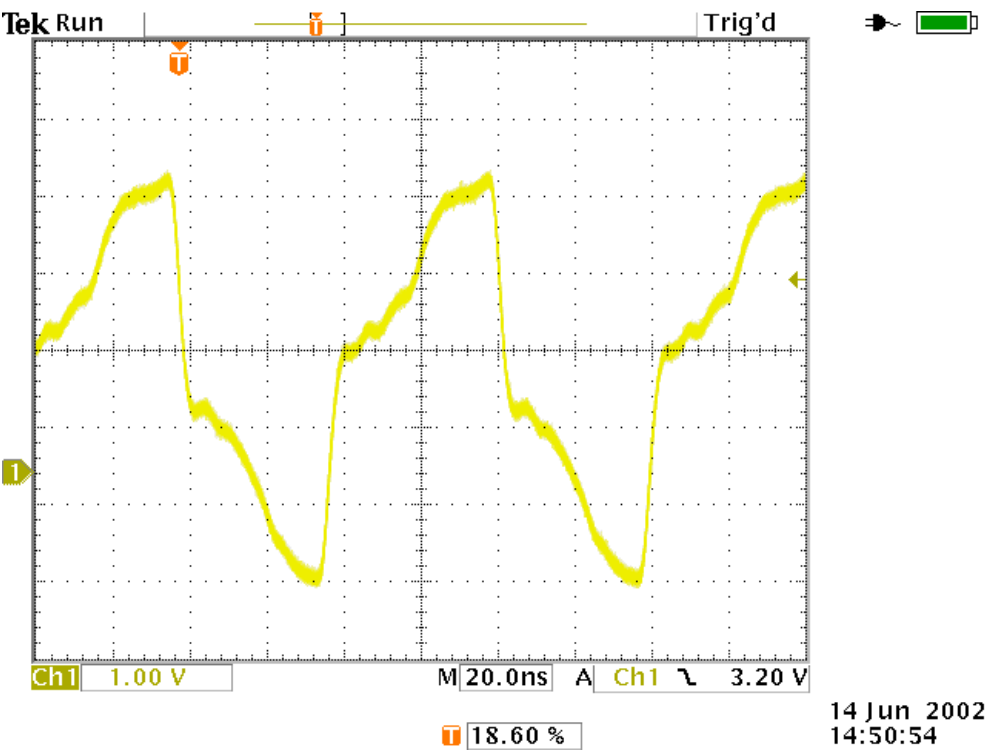
One twisted pair + digital cable R= 60 Ohm (12 MHz)



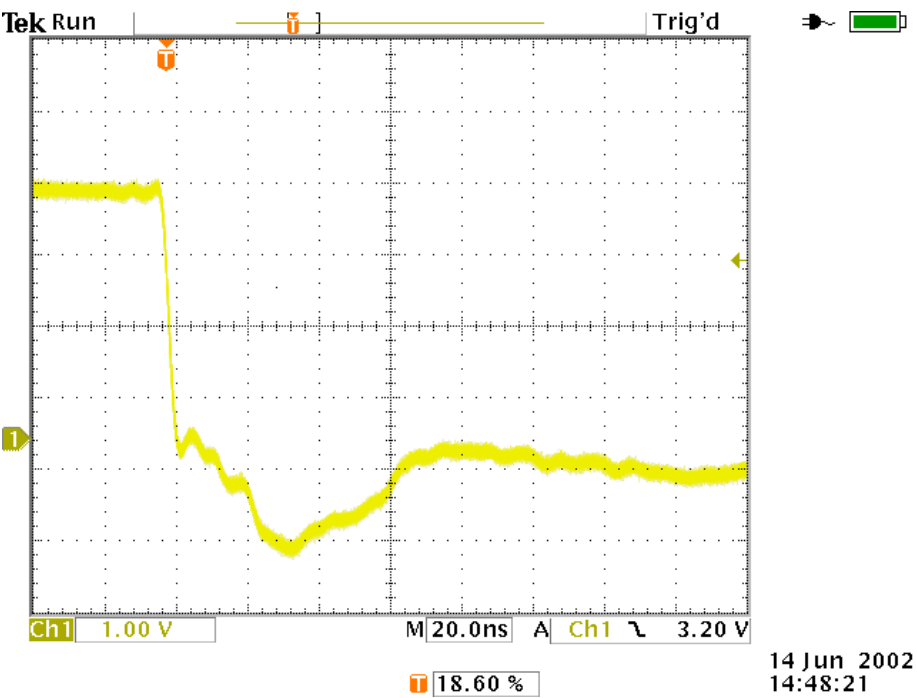
One twisted pair + digital cables R= 60 Ohm (1 MHz)



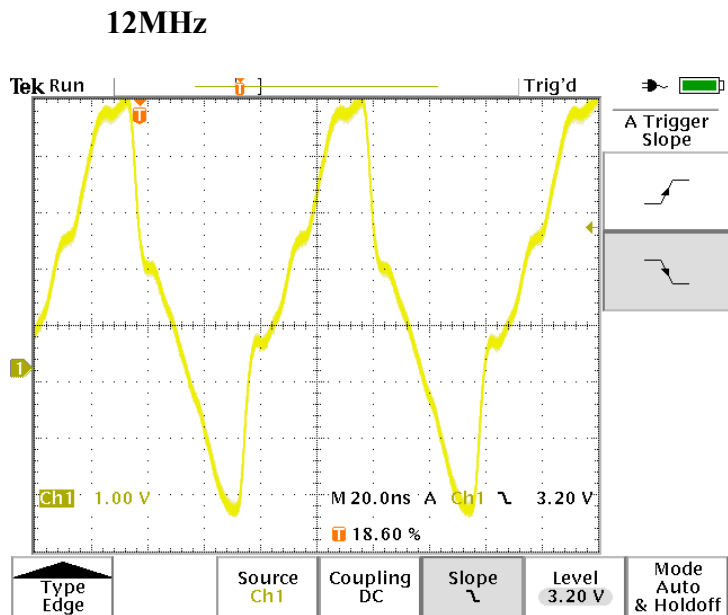
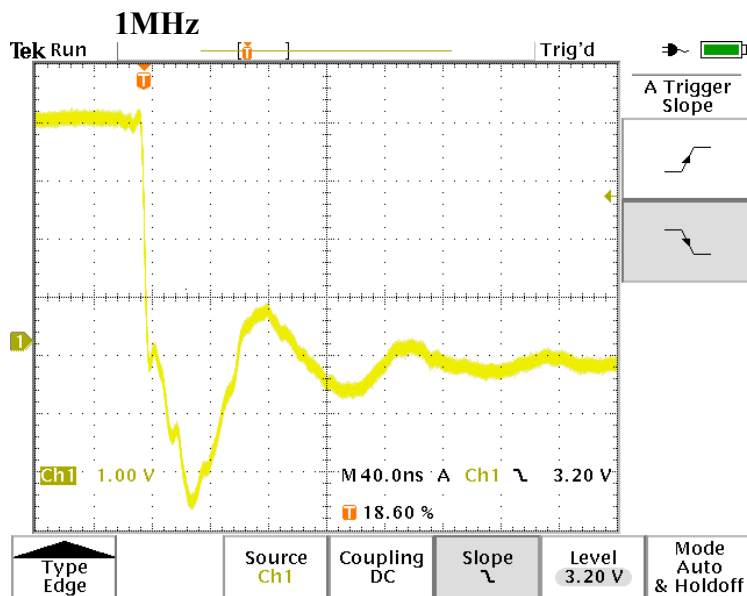
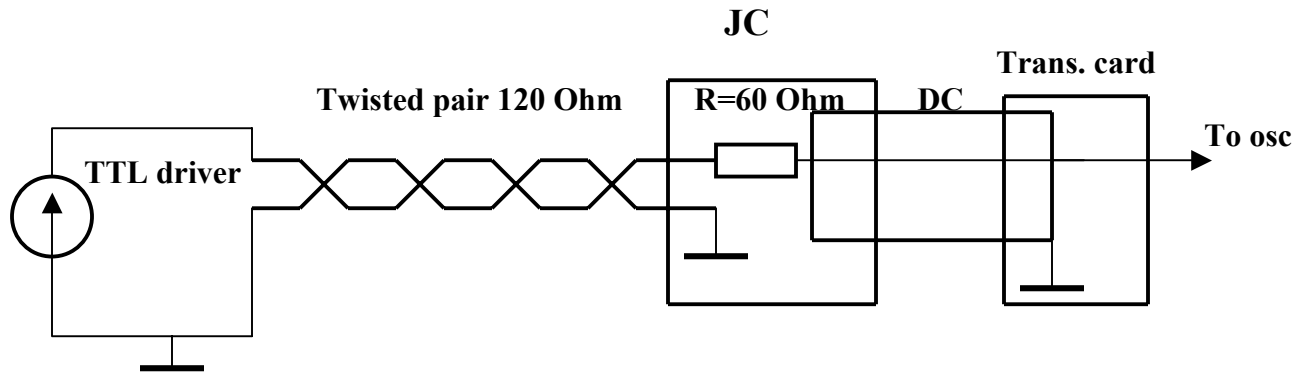
One twisted pair + digital cable R= 50 Ohm (12 MHz)



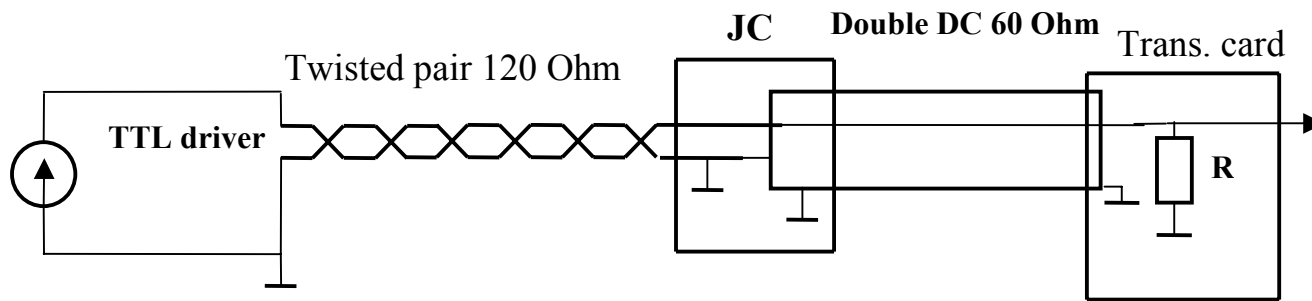
One twisted pair + digital cables R= 50 Ohm (1 MHz)



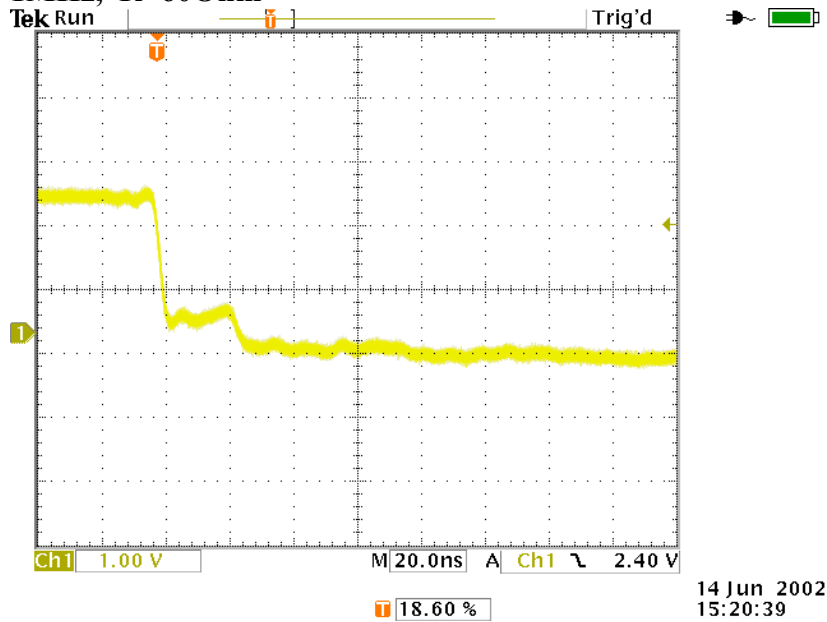
One twisted pair + digital cable for the Mode0, Mode1, CH\_Mode, PR\_IN signals  $R = 60 \text{ Ohm}$



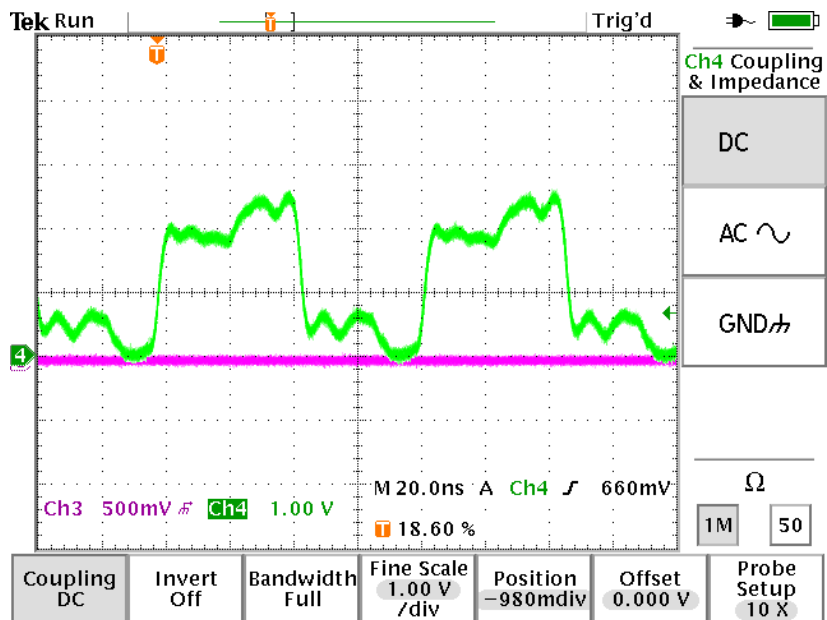
Parallel termination one twisted pair + double digital cabel  
for the Mode0, Mode1, CH\_Mode, PR\_IN signals



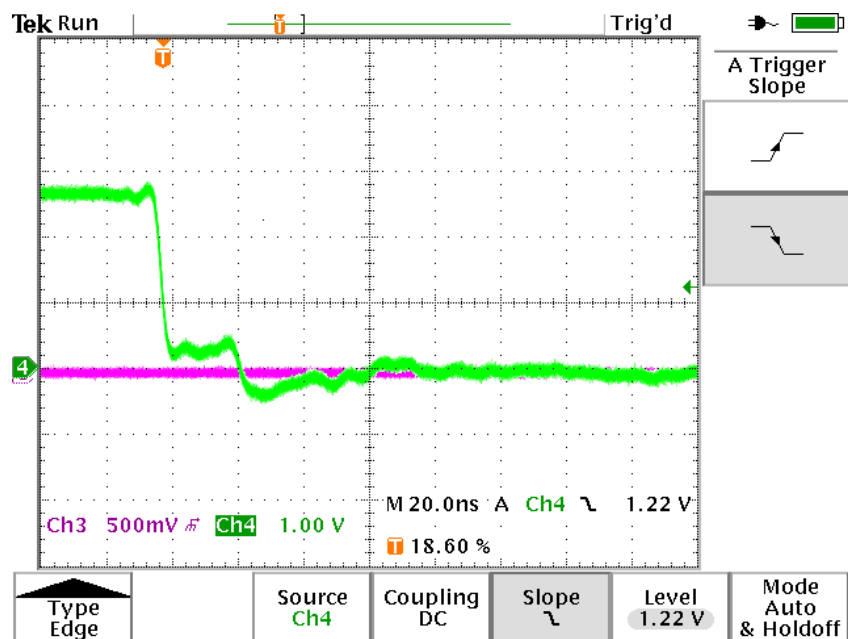
1MHz, R=60Ohm



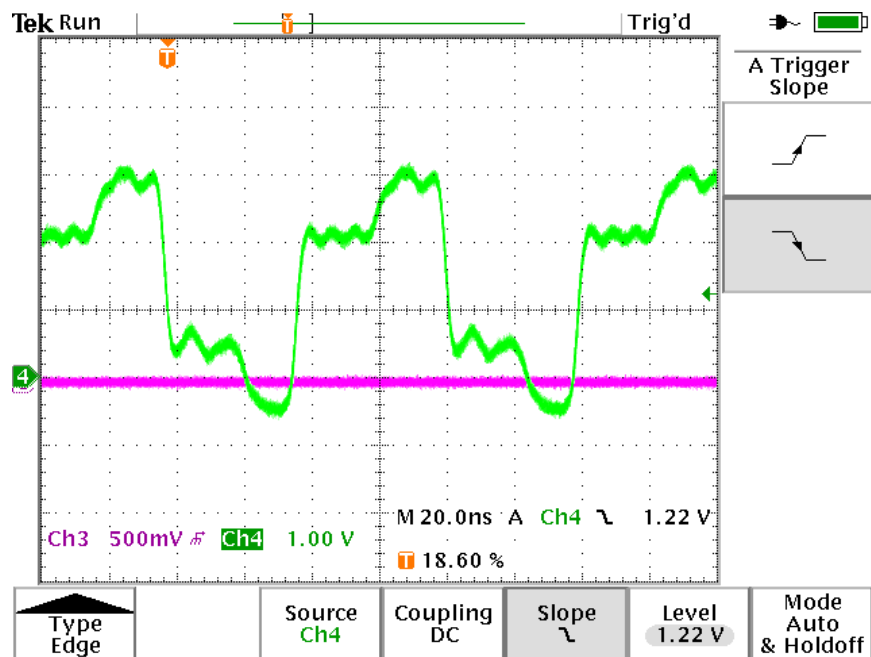
12 MHz, R=60Ohm



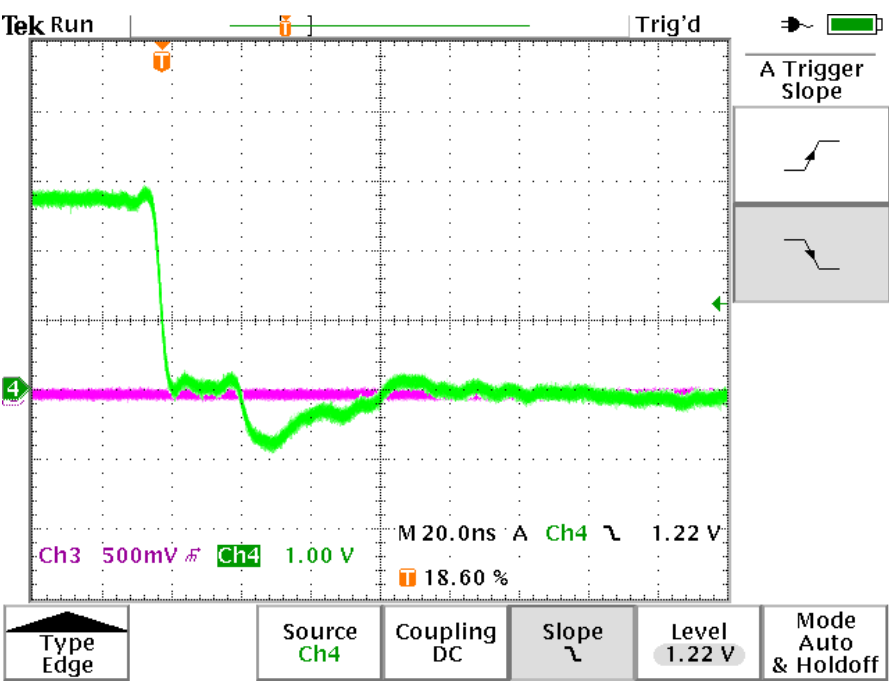
1MHz, R=90Ohm



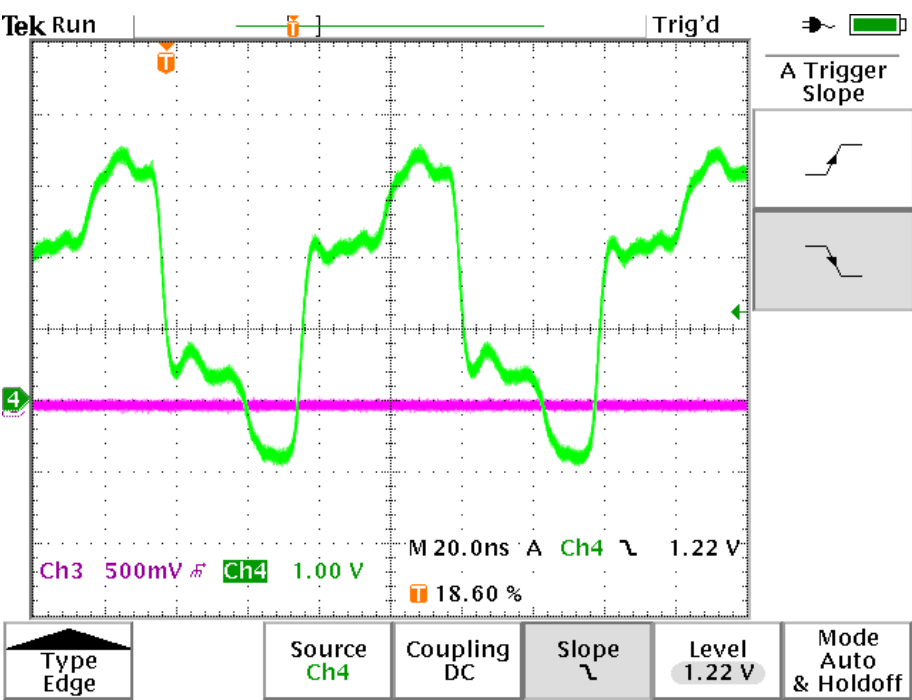
12 MHz, R=90Ohm



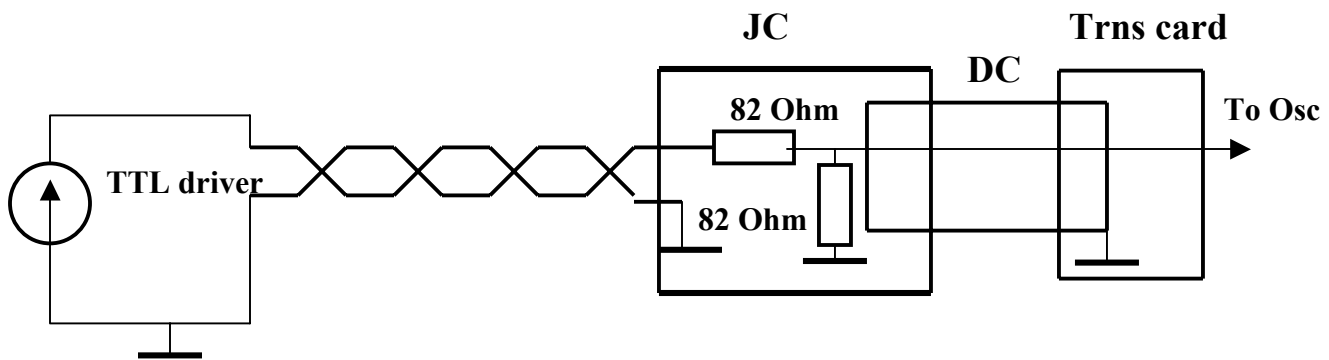
1MHz, R=120 Ohm



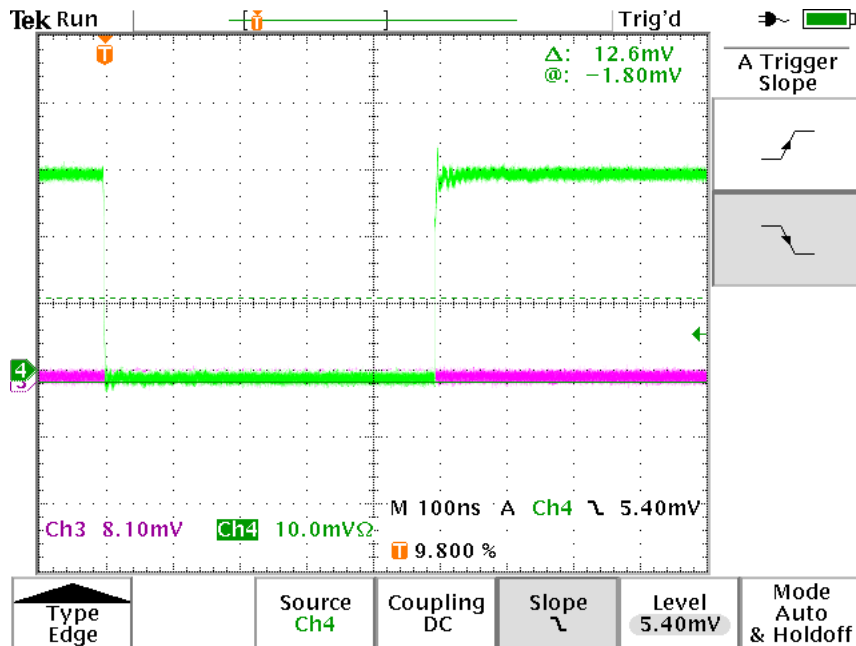
12 MHz, R=120 Ohm



### The termination on the JC for the twisted pair+digital cabel

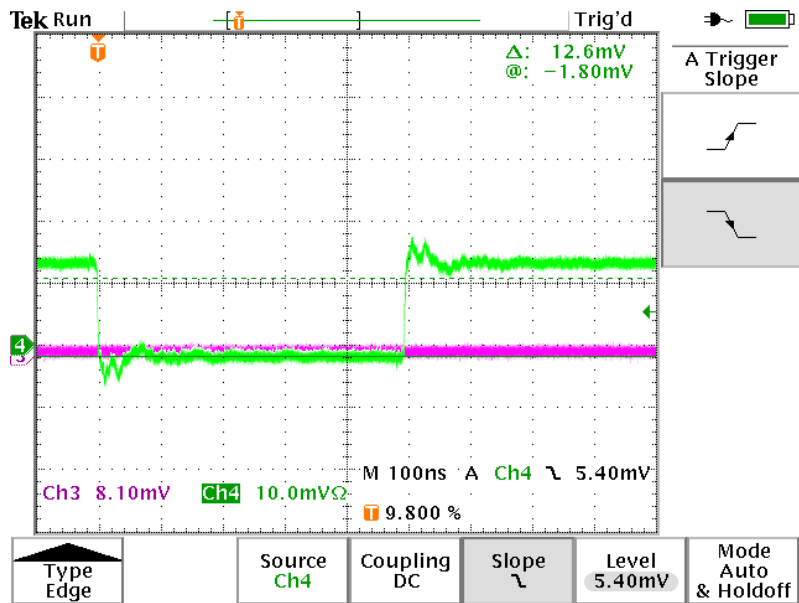


### TTL driver output 1 MHz

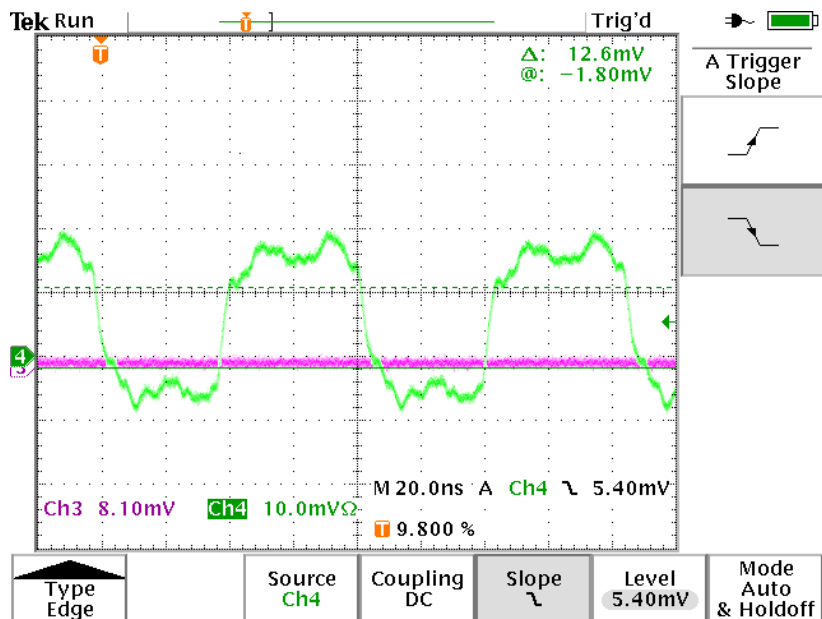




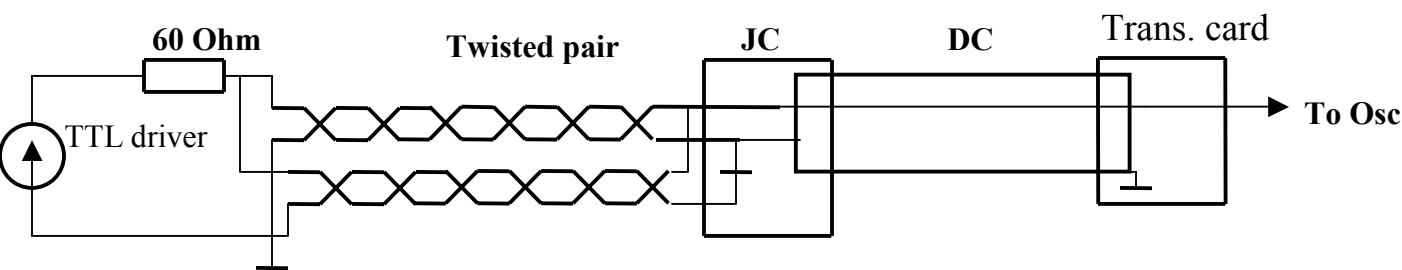
### The same signal on the transition card



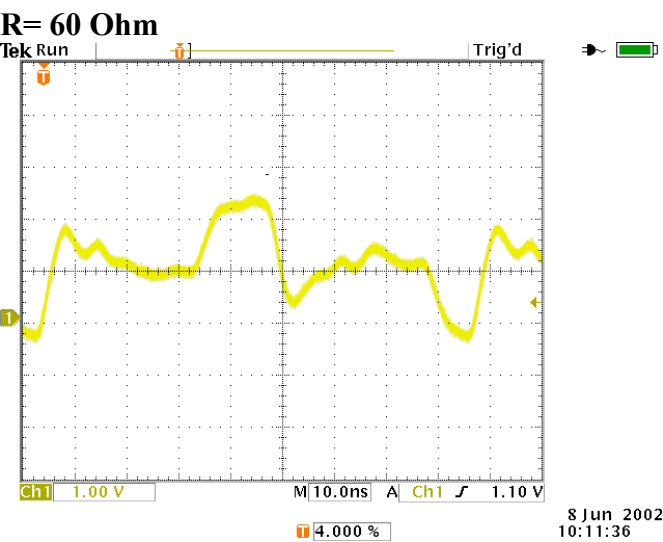
### The same configuration for the 12 MHz



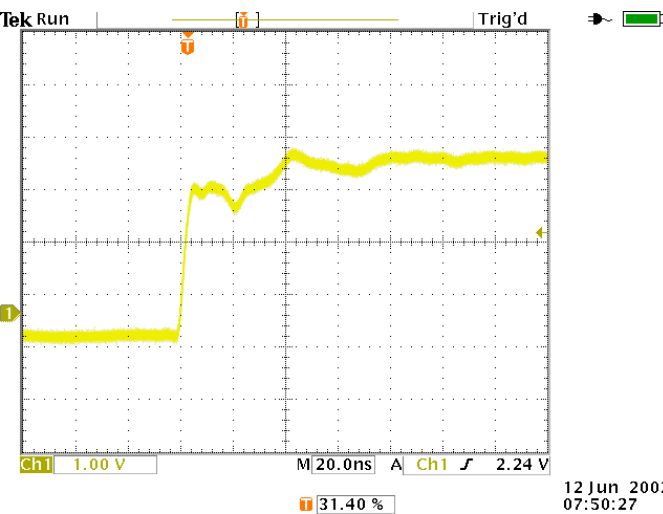
Two twisted pairs in parallel + digital cable open single ended signal



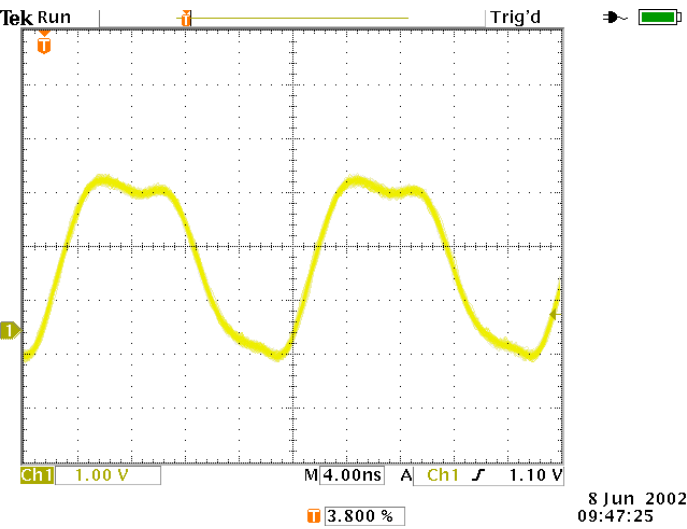
Two twisted pairs in parallel + digital cable characteristic resistense measurment (see the first page)



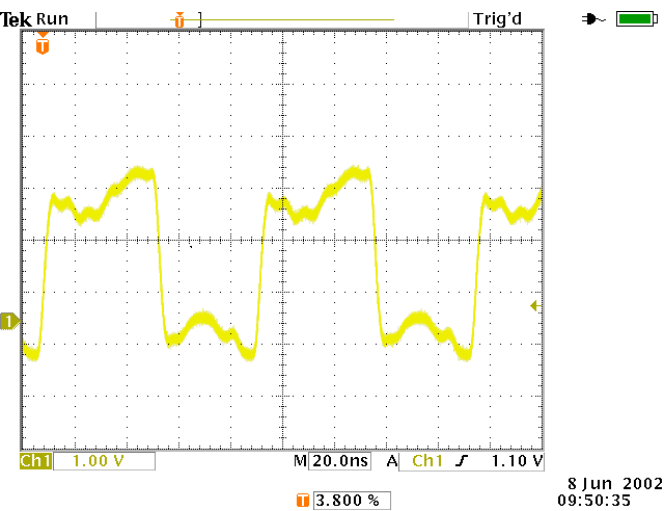
Two twisted pairs in parallel + digital cable open ended signal (1 MHz)



Two twisted pairs in parallel + digital cable open ended signal (53 MHz)

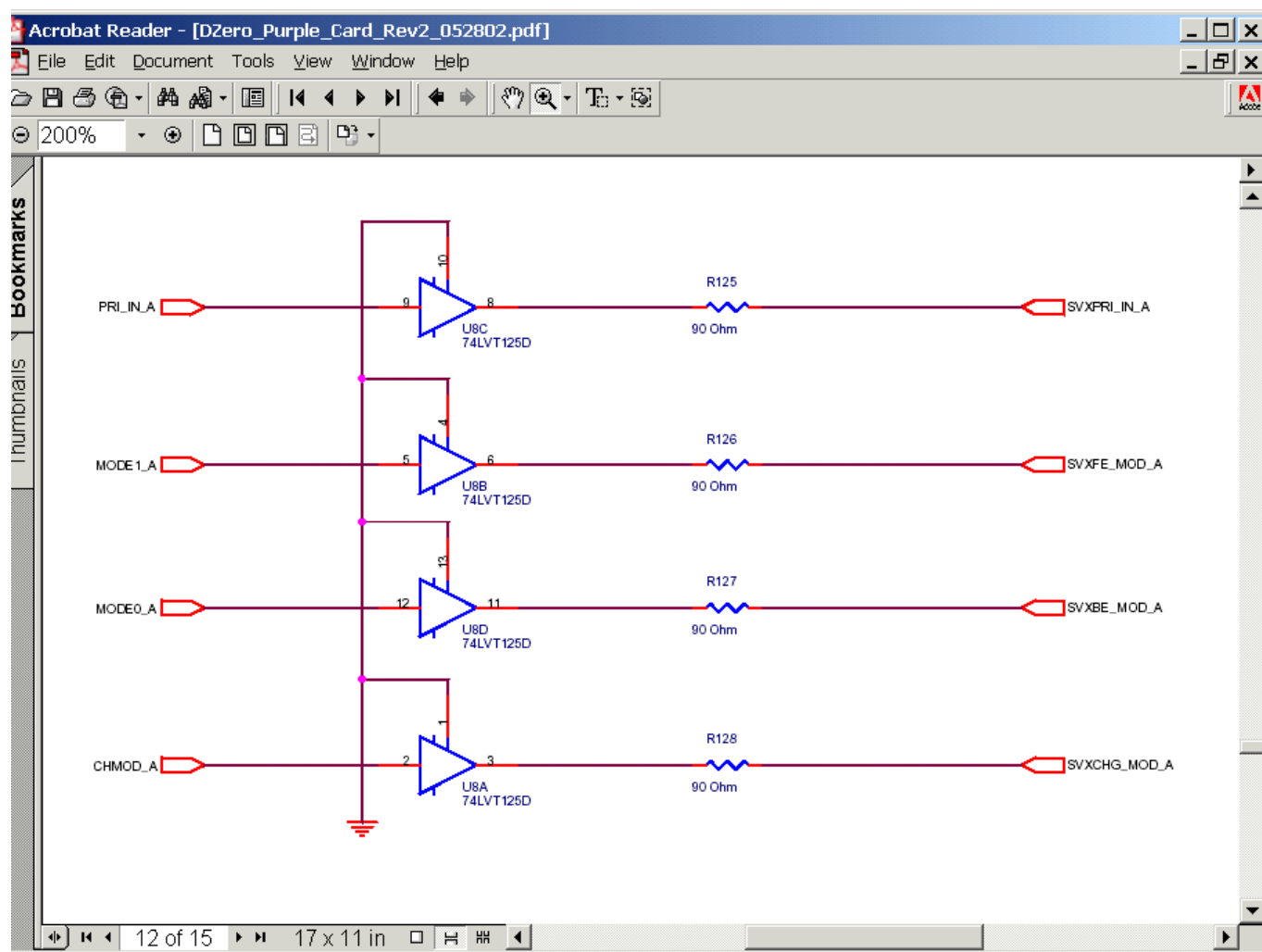


Two twisted pairs in parallel + digital cable open ended signal (12 MHz)



## The termination circuit for the Purple card for the Mode0, Mode1, CH\_Mode and PR\_IN signals

It is necessary to replace 90 Ohm resistors to 60 Ohm.



## **Conclusion**

- 1. It is necessary to replace the resistors for the Mode\_0, Mode\_1, CH\_Mode and PR\_IN on the purple board from 90 Ohm to 60 Ohm.**
- 2. It is necessary to terminate by the resistor 120 Ohm on the Hybrid side only CLK and /CLK signals.**
- 3. There are several solution for the termination Mode\_0, Mode\_1, CH\_Mode and PR\_IN signals (see above).**
- 4. To add serial resistors 150hm for the CLK - /CLK on the Adapter Card ?**